Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
NDHS Per: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_

**DNA and Protein Synthesis Test
STUDY GUIDE**

**DNA Structure:**Nucleotide Structure: draw and label a generalized picture
Watson and Crick
Rosalind Franklin
DNA:
 - twisted ladder, double helix
 - anti-parallel
 - draw the four nucleotides linked forming a short strand of DNA

**DNA Replication:**Where and When
Enzymes and Proteins involved
HOW
 - semi-conservative
 - parent and daughter strands
 - complimentary
 - importance of 5’ to 3’ bonding
 - leading strand
 - lagging strand & Okazaki fragments
Replication Errors
Telomeres
Differences in Prokaryotes

**Polypeptide Synthesis**Types of RNA, their roles and their structures
Differences between RNA and DNA
Code, Codon, Anti-codon relationship
Transcription: Where, What, and How
 - RNA polymerase
RNA Processing: Where, What, and How
 - 5’ cap, polyadenylated tail, introns and exon
Translation: Where, What, and How

 **YOU MUST BE ABLE TO EXPLAIN THE WHOLE PROCESS OF TRANSLATION
– it will be the major essay**
DNA 🡪 mRNA 🡪 Amino acid sequence using Codon Chart – the chart will be on the test

**Mutations and Genetic Disorders:**Gene Mutations:
 - point mutations: Silent, Missense, Non-sense
 - Frame shift mutations
Chromosomal Mutations:
 - Anueploidy: monosomy and trisomy
 - Polyploidism
 - Cross over errors

Mutagens and Carcinogens
 -Environmental factors